

## ABSTRACT

A first sin phase voltage representing the rotational angle of a resolver is derived from the sum of a rotational angle voltage involving a temperature component and a bias voltage. The rotational angle voltage and the bias voltage are calculated by calculating the values of the maximum peak point ( $\theta=90$  degrees) and the maximum bottom point ( $\theta=270$  degrees) of the rotor and then by subtracting them or adding them, respectively. Subsequently, a transformer efficiency  $K(T)$  and a phase difference  $\alpha(T)$  which involve temperature components therein are calculated from the rotational angle voltage, while an impedance  $R(T)$  of a common earth wire and another phase difference  $\beta(T)$  which involve temperature components are calculated from the bias voltage. The rotational angle can be calculated by putting these parameters into equations for calculating the first sin phase voltage. As a consequence, it becomes possible to detect the rotational angle of the rotor accurately without suffering the influence of temperature.